Evaluation of AIS Interventions AND M&E methods

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OBJECTIVE

- To open discussions on the methodology(ies) to be used in the preparation of the "**Economic and Financial Analysis**" of AIS Projects as well as when designing the **M&E System**
- To identify the **capacity needed in TCI** to measure the impact of innovation systems, particularly with respect to developing-country agriculture

CONTENT

- **Evaluation** approaches relevant to AIS Interventions
- **Monitoring** AIS interventions
- **Main lessons** and recommendations
- **Conclusions**

Evaluating AIS Interventions

- **Features of AIS** that influence how they are evaluated
- **Limitations of traditional methods** for evaluating AIS interventions
- **Evaluation approaches** for AIS interventions

Evaluating AIS Interventions

- **Features of AIS** that influence how they are evaluated:

1. A focus on strengthening capacity
2. A learning-based intervention process
3. Distinguishing impact, shared impacts, unexpected impacts, and unrelated impacts

Evaluating AIS Interventions

- **Limitations of traditional methods** for evaluating AIS interventions
  - Economic surplus approach and rate of return studies
  - Cost-benefit analysis
  - Randomized control trials
  - Ex post impact assessment

Evaluating AIS Interventions

Colombia PTA : Ex – post economic evaluation

- **Dynamic Research EvaluAtion for Management (DREAM)**

allows measuring economic returns or IRR and the changes in producer, consumer and government's surpluses generated through the investment in public resources in R&D and technology transfer

Evaluating AIS Interventions

Colombia PTA :

- **Prospective agendas**
- **Competitive Fund** co-financed R&D sub-projects - matching contribution to selected alliances

Alliances between researches and producersColombia

PTA: Ex – post economic evaluation

- Based on verifiable data of production and prices from official sources and, on the other hand, on assumptions and parameters on the impact of the technology built for each sub-project by the researches (assuming national/regional production eached by the technology)

Colombia PTA: Ex-post

- <u>The result of the analysis is not representative</u>
- **IRRs** range from 14 to 99% > 12%
- Jump in **productivity** (yield)
- **Success probability**: between 50 and 100%.
- **Adoption level** definitive in the IRR value
- **Size of the sector** where research is applied is definitive.
- IRR linked to **government support** through trade policies and subsidies.

Limitation 1: Data required

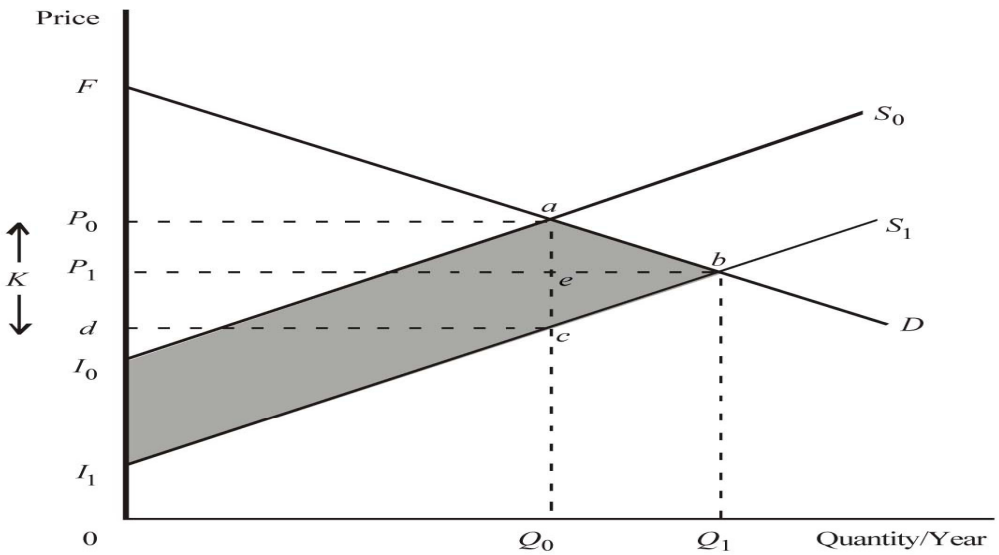
Research-related

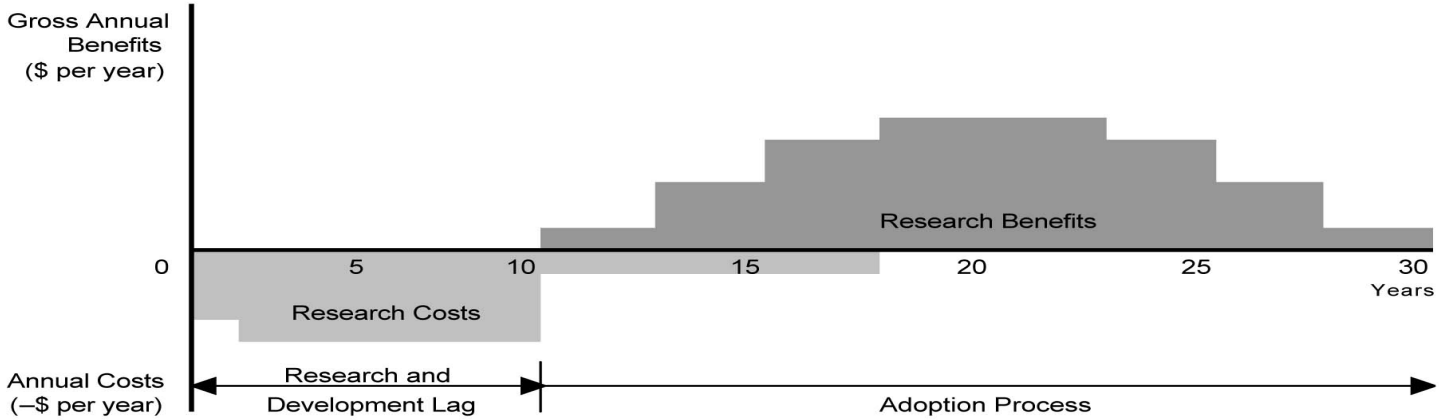
- Shift type
- Time lag
- Change in costs
- Change in yield
- Shift (K)
- Probability of success
- Adoption lag
- Max adoption level
- Year at max level / Years to abandon
- R&D, extension and others costs

Market related

- Quantities produced and/or consumed
- Prices received and/or paid
- Price elasticities of supply and demand
- Exogenous output growth rate
- Discount rate
- Tax/Subsidy

Limitation 2: Simplistic assumptions





Limitation 3: Not suitable for ……

- Ranking no commodity research such as socioeconomic and interdisciplinary research
- Analysing other sort of social benefits

➢ **One of the major benefit of the PTA,** which is not accounted for in the IRR relate to the **significant progress made in the process of knowledge generation through the sub-projects, capacity building and scientific documentation accomplishments as well as empowerment of producers organizations**

Evaluating AIS Interventions

- **Evaluation approaches** for AIS interventions

1. Theory-Based Impact Evaluation (TBIE)
2. Innovation and Institutional Histories
3. Participatory Impact Pathway Analysis
4. Causal Process Tracing
5. Stories and Narratives
6. Benchmarking Innovation Capacity

Monitoring AIS Interventions

- **Value added** by the new monitoring techniques
- **Available monitoring methods** for AIS interventions
- The Agriculture, Development & Innovation Index (**ADII**)

Monitoring AIS interventions

- **Value added** by the new monitoring techniques compare to the conventional techniques:

1. Explanatory
2. Inquisitive
3. Communicative and accessible
4. Inclusive
5. Rapid
6. Nonexpert/open access
7. Tailor-made

Monitoring AIS interventions

- Available **monitoring methods**

1. Outcome Mapping
2. Rapid Appraisal of Agricultural Knowledge System (RAAKS)
3. Most Significant Change (MSC)

Monitoring AIS interventions

Agriculture, Development & Innovation Index (ADII)

1. Driven by the conceptual framework
2. Highlight innovation system properties and performance by covering four distinct domains:
   A. knowledge and education
   B. bridging institutions
   C. business and enterprise
   D. the enabling environment.
3. Based only on data from secondary sources

Evaluating and monitoring AIS Interventions

- **Main lessons** and recommendations:

1. Seek a stronger learning orientation
2. Make assumptions explicit and revisit theories of change
3. Use counterfactuals
4. Use Mixed methods
5. Incorporate different stakeholders' perspective

CONCLUSIONS

- A better understanding of **how AIS function** is critical to enhance productivity and reduce poverty in developing-country agriculture.

- Our efforts to develop a better understanding require to **become familiar on how to measure innovation**

- Such measurements will inform policymakers, investors, donors, and practitioners to **support the development of responsive, dynamic, and competitive agriculture.**